BIOTECHNOLOGY SYSTEMS BRANCH 1001

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Revised 01/29/2002



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         Burgess, Catherine
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         Gunther, Erik
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         Zerhusen, Bryan D.
23 <120> TITLE OF INVENTION: PROTEINS, POLYNUCLEOTIDES ENCODING THEM AND METHODS OF
         USING THE SAME
26 <130> FILE REFERENCE: 21402-250 (CURA-550)
28 <140> CURRENT APPLICATION NUMBER: 10/052,648
29 <141> CURRENT FILING DATE: 2002-01-18
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32 <151> PRIOR FILING DATE: 2001-01-18
34 <150> PRIOR APPLICATION NUMBER: 60/272,920
35 <151> PRIOR FILING DATE: 2001-03-02
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55 <150> PRIOR APPLICATION NUMBER: 60/265,517
56 <151> PRIOR FILING DATE: 2001-01-31
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- 67 <160> NUMBER OF SEQ ID NOS: 97
- 69 <170> SOFTWARE: PatentIn Ver. 2.1

## ERRORED SEQUENCES

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PATENT APPLICATION: US/10/052,648

DATE: 10/01/2002
TIME: 16:42:29

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3802       450       450       Cys       Asp       Pro       Val       Thr       Gly       His       Cys       Cys       Cys       Leu       Ala         3804       His       Ala       Asp       Gly       Cys       Asp       Pro       Val       Thr       Gly       His       Cys       Cys       Cys       Asp       Asp       Asp       Asp       Cys       Asp       Thr       Cys       Pro       Pro       Gly       Arg       Trp       Asp       Cys       Asp       Ser       Thr       Cys       Pro       Pro       Gly       Arg       Trp       Asp       Ser       Cys       Ser       Cys       Glu       Asp       Trp       Asp       Trp       Asp       Cys       Ser       Cys       Glu       Asp       Cys       Trp       Cys       Glu       Asp       Cys       Ser       Cys       Glu       Asp       Cys       Ser       Cys       Glu       Asp       Cys       Ser       Cys       Glu       Asp       Cys       Glu       Asp       Cys       Glu       Cys       Asp       Cys       Asp       Cys       Asp       Cys       Asp       Cys       Asp <td< td=""><td></td><td>Pro</td><td>Asp</td><td></td><td>Thr</td><td>Phe</td><td>Glv</td><td>Leu</td><td></td><td>Cvs</td><td>Ser</td><td>Glu</td><td>His</td><td>Cys</td><td>Asp</td><td>Cys</td><td>Ser</td></td<>		Pro	Asp		Thr	Phe	Glv	Leu		Cvs	Ser	Glu	His	Cys	Asp	Cys	Ser
3804       His Ala Asp Gly Cys Asp Gly Cys Asp Pro Val Thr Gly His Cys Cys Cys Leu Ala       3805 465       470       470       475       475       485       480         3807       Gly Trp Thr Gly Ile Arg Cys Asp Gly Cys Asp Gly Gly Trp Thr Gly His Gly His Gly Arg Trp A495       485       480       480       475       490       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495       495<				1						. 4				-	-	-	
3805       465       470       470       475       485       486       480       3807       614       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777       777 <td< td=""><td></td><td>His</td><td></td><td>Asp</td><td>Glv</td><td>Cvs</td><td>Asp</td><td>Pro</td><td>Val</td><td>Thr</td><td>Gly</td><td>His</td><td>Cys</td><td>Cys</td><td>Cys</td><td>Leu</td><td>Ala</td></td<>		His		Asp	Glv	Cvs	Asp	Pro	Val	Thr	Gly	His	Cys	Cys	Cys	Leu	Ala
3807         Gly         Trp         Thr         Gly         Fro         Pro         Arg         Trp         Arg         Cys         Asp         Ser         Thr         Cys         Pro         Pro         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495         495 <td></td> <td></td> <td></td> <td></td> <td>1</td> <td>- 1</td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>-</td> <td>•</td> <td>_</td> <td></td> <td></td>					1	- 1					_		-	•	_		
3808       485       490       495       495         3810       Gly       Pro       Asn       Cys       Ser       Val       Ser       Cys       Ser       Cys       Glu       Asn       Gly       Pro       Cys       Ser       Cys       Ala       Pro       Gly       Phe       Arg       Pro       Cys       Ala       Ala       Ala       Pro       Cys       His       His       Ila       Ala       Ala       Ala       Pro       Cys       Ala       Ala <td< td=""><td>3807</td><td>Glv</td><td>Trp</td><td>Thr</td><td>Glv</td><td>Ile</td><td>Arq</td><td>Cvs</td><td>Asp</td><td>Ser</td><td>Thr</td><td>Cys</td><td>Pro</td><td>Pro</td><td>Gly</td><td>Arg</td><td>Trp</td></td<>	3807	Glv	Trp	Thr	Glv	Ile	Arq	Cvs	Asp	Ser	Thr	Cys	Pro	Pro	Gly	Arg	Trp
3810       Gly       Pro       Asn       Cys       Ser       Val       Ser       Cys       Ser       Cys       Glu       Asn       Gly       Ser       Cys       Glu       Cys       Glu       Asn       Gly       Pro		1	r		1		5	- 4	-			•			-		_
3811       500       505       510       510       510       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511       511		Glv	Pro	Asn	Cvs	Ser	Val	Ser	Cys	Ser	Cys	Glu	Asn	Gly	Gly	Ser	Cys
3813       Ser       Pro       Glu       Asp       Gly       Ser       Cys       Glu       Cys       Ala       Pro       Gly       Phe       Arg       Gly       Pro         3814		1							-		-			_			
3814       515       520       525       525         3816       Leu       Cys       Gln       Arg       11e       Cys       Pro       Pro       Gly       Phe       Tyr       Gly       His       Gly       Cys       Ala         3817       530       10       11e       Cys       S35       10       540       540       11e       Gly       Ala		Ser	Pro	Glu	Asp	Gly	Ser	Cys	Glu	Cys	Ala	Pro	Gly	Phe	Arg	Gly	Pro
3816       Leu       Cys       Gln       Arg       Ile       Cys       Pro       Pro       Gly       Phe       Tyr       Gly       His       Gly       Cys       Ala         3817       530					-	-		•		-			_		_		
3817       530       535       546         3819       Gln       Pro       Cys       Pro       Leu       Cys       Val       His       Ser       Ser       Arg       Pro       Cys       His       Ile         3820       545       557       550       550       Fro       555       555       560       560         3823       610       11e       Cys       Glu       Cys       Leu       Pro       Gly       Phe       Ser       Gly       Ala       Leu       Cys       Asn         3825       Gln       Val       Cys       Ala       Gly       Tyr       Phe       Gly       Gln       Asp       Cys       Ala       Gln       Leu       Cys       Fro	3816	Leu	Cys	Gln	Arq	Ile	Cys	Pro	Pro	Gly	Phe	Tyr	Gly	His	Gly	Cys	Ala
3820       545       550       555       560         3822       Ser Gly Ile Cys Glu Cys Leu Pro Gly Phe Ser Gly Ala Leu Cys Asn         3823       570       570       575         3825       Gln Val Cys Ala Gly Gly Tyr Phe Gly Gln Asp Cys Ala Gln Leu Cys         3826       580       580       585       585         3828       Ser Cys Ala Asn Asn Gly Thr Cys Ser Pro Ile Asp Gly Ser Cys Gln         3829       595       600       600       605         3831       Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro       620         3832       610       610       610       610         3834       Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly			_		_		-			_							
3820       545       550       555       560         3822       Ser Gly Ile Cys Glu Cys Leu Pro Gly Phe Ser Gly Ala Leu Cys Asn         3823       570       570       575         3825       Gln Val Cys Ala Gly Gly Tyr Phe Gly Gln Asp Cys Ala Gln Leu Cys         3826       580       580       585       585         3828       Ser Cys Ala Asn Asn Gly Thr Cys Ser Pro Ile Asp Gly Ser Cys Gln         3829       595       600       600       605         3831       Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro       620         3832       610       610       610       610         3834       Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly	3819	Gln	Pro	Cys	Pro	Leu	Cys	Val	His	Ser	Ser	Arg	Pro	Cys	His	His	Ile
3823       565       570       575         3825       Gln Val Cys       Ala Gly Gly Tyr Phe Gly Gln Asp Cys Ala Gln Leu Cys         3826       580       585       585       590         3828       Ser Cys Ala Asn Asn Gly Thr Cys Ser Pro Ile Asp Gly Ser Cys Gln       590       605         3829       595       600       600       605       605         3831       Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro Pro       620       700       700         3834       Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly				_													
3825 Gln Val Cys Ala Gly Gly Tyr Phe Gly Gln Asp Cys Ala Gln Leu Cys 3826 580 585 590  3828 Ser Cys Ala Asn Asn Gly Thr Cys Ser Pro Ile Asp Gly Ser Cys Gln 3829 595 600 605  3831 Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro Pro 3832 610 615 620  3834 Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly	3822	Ser	Gly	Ile	Cys	Glu	Cys	Leu	Pro	Gly	Phe	Ser	Gly	Ala	Leu	Cys	Asn
3826       580       585       590         3828       Ser Cys       Ala Asn Asn Gly Thr Cys       Ser Pro Ile Asp Gly Ser Cys Gln         3829       595       600       600       605         3831       Cys       Phe Pro Gly Trp Ile Gly Lys       Asp Cys       Ser Gln Ala Cys       Pro Pro         3832       610       615       615       620       620         3834       Gly       Phe Trp Gly       Pro Ala Cys       Phe His Ala Cys       Ser Cys       His Asn Gly	3823		-		-	565			•								
3826       580       585       590         3828       Ser Cys       Ala Asn Asn Gly Thr Cys       Ser Pro Ile Asp Gly Ser Cys Gln         3829       595       600       600       605         3831       Cys       Phe Pro Gly Trp Ile Gly Lys       Asp Cys       Ser Gln Ala Cys       Pro Pro         3832       610       615       615       620       620         3834       Gly       Phe Trp Gly       Pro Ala Cys       Phe His Ala Cys       Ser Cys       His Asn Gly	3825	Gln	Val	Cys	Ala	Gly	Gly	Tyr	Phe	Gly	Gln	Asp	Cys	Ala	Gln	Leu	Cys
3829 595 600 605  3831 Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro Pro 3832 610 615 620  3834 Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly				-		_											
3829 595 600 605  3831 Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro Pro 3832 610 615 620  3834 Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly		Ser	Cys	Ala	Asn	Asn	Gly	Thr	Cys	Ser	Pro	Ile	Asp	Gly	Ser	Cys	Gln
3831 Cys Phe Pro Gly Trp Ile Gly Lys Asp Cys Ser Gln Ala Cys Pro Pro 3832 610 615 620 620 3834 Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly			_														
3832 610 615 620 3834 Gly Phe Trp Gly Pro Ala Cys Phe His Ala Cys Ser Cys His Asn Gly		Cys	Phe	Pro	Gly	Trp	Ile	Gly	Lys	Asp	Cys	Ser	Gln	Ala	Cys	Pro	Pro
		-			_	_			-								
	3834	Gly	Phe	Trp	Gly	Pro	Ala	Cys	Phe	His	Ala	Cys	Ser	Cys	His	Asn	Gly
3033 023	3835	625		_	_		630					635					640
3837 Ala Ser Cys Ser Ala Glu Asp Gly Ala Cys His Cys Thr Pro Gly Trp	3837	Ala	Ser	Cys	Ser	Ala	Glu	Asp	Gly	Ala	Cys	His	Cys	Thr	Pro		$\mathtt{Trp}$
3838 645 650 655	3838					645					650					655	

DATE: 10/01/2002 RAW SEQUENCE LISTING TIME: 16:42:29 PATENT APPLICATION: US/10/052,648

Input Set : A:\Cura5501.app
Output Set: N:\CRF4\10012002\J052648.raw

															_				
	3840	Thr	Gly	Leu		Cys	Thr	Gln	Arg	Cys	Pro	Ala	Ala	Phe		Gly	Lys		
	3841			_	660						_	~ 1			670		***		
	3843	Asp	Cys			Val	Cys	Gin		GIn	Asn	GLY	Ата		Cys	Asp	HIS		
	3844			675		_	_,	_	680	1	<b>~</b> 1	<b>5</b> 1	m1	685	<b>a</b> 1	*** -	G		
	3846	Ile		Gly	Lys	Cys	Thr		Arg	Thr	GLŸ	Pne		GIY	GIN	HIS	Cys		
	3847	_	690		_		_	695	-1	-1	<b>a</b> 1	m	700	G	<b>a</b> 1	a1	T		
	3849		Gln	Arg	Cys	Ala		GLY	Thr	Pne	GTA		СТА	Cys	GIII	GIN			
	3850	705		_		_	710	_	<b>-1</b>		•	715	**- 1	m la	<b>~1</b>	m1	720		
	3852	Cys			Met		Asn	Ser	Thr	Cys		HIS	vaı	Thr	СТА		Cys		
	3853			_	_	725	-1	<b>-</b>	<b>a</b> 1	<b>~1</b> -	730	<b>G</b>	7	<b>~1</b> ~	7 1 n	735	Tou		
	3855	Tyr	Cys	Ser		GLY	Pne	ьуs	GIY		Arg	Cys	ASP	GIII		Ата	Leu		
	3856				740	_			m	745	T	T1.	C	Dwo	750	T 011	C1,,		
	3858	Met	Met		GIu	Leu	Asn	Pro		Thr	гаг	116	ser	765	Ата	ьeu	GIY		
	3859		~ ~	755	'		**- 1	<b>01</b>	760	77. T	m la sa	<b>C1</b>	т1.		T OU	LOU	Т он		
	3861	Ala			His	ser	val		Ата	vaı	THE	GTĀ	780	мес	Leu	ьеи	Leu		
	3862	51.	770		**- 7	17_ T	T	775	<b>~1</b>	T 011	nho	ת 1 ת		Hic	λrα	λνα	λνα		
	3864			тте	val	vaı	теи 790	Leu	СТА	ьeu	Pne	795	ттр	птъ	AIG	AIG	800		
	3865			<b>01</b>	T	C1		A an	T 011	λla	Dro		₩ <b>1</b>	Sor	ጥህጉ	Thr			
	3867	GIN	rās	GIU	ьуѕ	805	Arg	ASP	ьeu	Ата	810	AIG	Val	261	тут	815	FIO		
	3868 3870	<b>71</b> 2	Wot	7 ~~	Mot		Cor	Пhr	λen	Фттгг		T.211	Ser	Glv	Δla		Glv		
	3870	Ата	мес	Arg	820	1 11T	ser	1111T	АБР	825	Ser	пец	Der	GLY	830	Cys	<u> </u>		
F \	3873	Mot	7 cn	λνα		Cln	λen	Thr	ጥህጕ	-	Met	Asn	T.vs	G1 v		T.vs/	Xaa		
E/	3874	Mec	лэр	835	nry	GIII	non	1111	840			F		_845_				see p.5 for evor explara	_
E>	3876/	Xaa	Xaa		Xaa	Xaa	Xaa	Xaa		_	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	sel P.S	
	387		850					855					860				`	) , /	
E>	387/9	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa /	In 1400.	/
	38\$0	865					870			(		875					880	10000	,
E>	3882	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Met	Lys	Ser	Pro	Val	His	Met	()	, \
	3883															895		Volara	tron
	3885	Gly	Ser	Pro	Tyr	Thr	Asp	Val	Pro		Leu	Ser	Thr	Ser		Lys	Asn	2790	
	3886				900					905	_	_			910	_			
	3888	Ile	$\mathtt{Tyr}$		Val	Glu	Pro	Thr		Ser	Val	Val	Gln		Gly	Cys	GTA		
	3889			915					920	_		_	_	925	_	_	_		
	3891	His		Ser	Ser	Tyr	Ile		Asn	Ala	Tyr	Asp		Pro	Arg	Asn	Ser		
	3892		930		_			935	_	_	_		940	-1	<b>~</b>		31-		
	3894			Pro	Gly	His		Asp	Leu	Leu	Pro		Arg	GIn	ser	Pro			
	3895				_		950	_	~ 1	_		955					960		
	3897	Asn	Gly	Pro	Ser		Asp	Lys	Gln	Ser									
	3898					965													

VARIABLE LOCATION SUMMARY

DATE: 10/01/2002

PATENT APPLICATION: US/10/052,648

TIME: 16:42:30

Input Set : A:\Cura5501.app

Output Set: N:\CRF4\10012002\J052648.raw

## Use of n's or Xaa's(NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing. Use of  $\langle 220 \rangle$  to  $\langle 223 \rangle$  is MANDATORY if n's or Xaa's are present. in  $\langle 220 \rangle$  to  $\langle 223 \rangle$  section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:13; N Pos. 1408 Seq#:14; Xaa Pos. 203

Seq#:15; N Pos. 2004

Seq#:35; Xaa Pos. 848,849,850,851,852,853,854,855,856,857,858,859,860,861

Seq#:35; Xaa Pos. 862,863,864,865,866,867,868,869,870,871,872,873,874,875

Seq#:35; Xaa Pos. 876,877,878,879,880,881,882,883,884,885,886,887,888,889

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/052,648

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Input Set : A:\Cura5501.app

Output Set: N:\CRF4\10012002\J052648.raw

L:1553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:1380 L:1624 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:192 L:1696 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:1980 L:3873 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:35

M:340 Repeated in SeqNo=35